REMARKS

Applicant submits this Amendment and Response in reply to the Official Action dated January 8, 2009. Applicant submits that the Amendment and Response is fully responsive to the Official Action for at least the reasons set forth herein.

At the onset, Applicant notes that claim 1 has been amended for clarification. Claim 1 has been amended to recite, *inter alia*, in a cellular telephone system comprising at least one antenna for detecting a received signal and a signal processor for processing the received signal detected by the at least one antenna, a method of determining the amount of signal power and interference power in a received signal, the received signal having a wanted signal providing said signal power and a plurality of interfering signals providing said interference power, the wanted signal being encoded such that there is a channel structure including a data channel and a broadcast channel, the method comprising use of the signal processor in the steps of.
The claim has been also amended to recite, *inter alia*, using the set of amplitude values to determine both a signal power level and an interference power level for at least a portion of the received signal. Claim 3 has been amended to correct a minor editorial error. The dependency of claims 8-11 have been changed to claim 1. Claims 12-26 have been cancelled herewith without any prejudice to the subject matter of the claims being introduced into another application.

Applicant respectfully submits new claim 27 for examination. Claim 27 is directed to the received signal. The received signal comprises first and second, time co-incident received signals, said first received signal providing the further known structure used in step (a) and where step (b) comprising processing the second received signal to provide the set of amplitude values for determining the power level of the interference signals.

No new matter has been added to the application by way of the aforementioned amendments. For example, Applicant respectfully directs the Examiner's attention to pages 3-8 of the application. Applicant notes that the identified section is provides for the convenience of the Examiner and is not intended to be an exhaustive list.

In the Official Action, claims 1 and 3-26 were rejected under 35 U.S.C. § 101 as being allegedly directed to non-statutory subject matter. While the Applicant disagrees with the rejection, Applicant submits that the rejection is obviated by the above-identified amendments. The claims are "tied" to a specific system.

Accordingly, withdrawal of the rejection is respectfully requested.

Applicant submits that claims 1, 3-11 and 27 are patentable over the cited references. In the Official Action, claims 1, 3-6, 12 and 18-26 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Zhang, U.S. Patent No. 6,369,758 in view of ETSI EN 300 744 V.1.4.1 (hereinafter "ETSI") in further view of Lipsanen et al., U.S. Pat. Pub 2004/0242203 (hereinafter "Lipsanen"). Claims 7-11 and 13-17 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Zhang, ETSI, Lipsanen and DeFreese, U.S Patent No. 6,493,876.

Applicant submits that the claimed invention is not obvious in view of the above-identified references.

Applicant submits that the claimed invention is directed to a different problem than Zhang. Notably, in the claimed invention, the interfering signals are not the same signal by different or multiple paths, rather the signals are from different sources. Notably, when there are multiple base stations, the channels are uses by more than one base station. A significant amount of interference from the signals transmitted from the other base stations using the same channel

is present in the wanted signal. The interference includes the same general characteristics as the wanted signal, but is unsynchronized in time.

Zhang is directed to an adaptive antenna array for mobile communications, and in particular to an adaptive antenna array for use in a mobile receiver in a multipath environment. Zhang is concerned with training the adaptive antenna array to cancel unwanted multipath signals. In particular, Zhang accounts for signals transmitted where there are more than one path of delivery. The receiver cannot distinguish the best path to lock onto because of a multipath coherency, namely the same signal is being received several times and is producing interference. Zhang uses dedicated "training symbols" to measure noise and have adaptive antenna arrays.

Zhang solves the problem by inserting a training symbol into the preamble of the signal and processing the received signal in relation to the training symbols and to other known characteristics of the preambles. In other words, the training symbols are used to find the correct path for the antenna array to lock onto.

For example, Zhang states:

> [i]n coherent multipath condition, or if both the receiving adaptive antenna array and the transmission antenna as well as any reflecting bodies in the environment are at a standstill, multipath signals from the same source (with the exception of white noise) are coherent, and prior time domain adaptive antenna array algorithms will normally fail to work properly. According to the present invention, training symbols are therefore designed for the adaptive antenna array to avoid multipath coherency. Because white noise is always non-coherent in multipath propagation conditions, pseudo wide band random noise is a proper choice for designing the training symbols TRS I or TRS II.

Col. 6, lines 44-56.

Applicant further submits that the references fail to teach using the set of amplitude values to determine both the signal power level and the interferences power level. At best, Zhang

teaches using the amplitude values to determine the signal power level. Zhang does not teach using the amplitude value of the known signal to determine the interference. In contrast, Zhang teaches determining the interference from a different signal. In a separate and dedicated operation, Zhang teach measuring the interference from a null symbol in the preamble, where there is no signal power.

Specifically, Zhang states that "preferably, the output data signals include a null symbol, the method including a step of measuring interfering signal characteristics during the null symbol and, based on the interfering signal characteristics, selecting which of a plurality of predetermined algorithms to use to determine the weighting factor for signals received by each antenna." Col. 3, lines 12-18. The null symbol 42 is a symbol that has no signal power at the beginning of the frame 38, thus allowing the adaptive antenna array to distinguish the null symbol from the other symbols and measure interference characteristics of the channel. Col. 5, lines 10-14.

Since, there is no signal power in the null symbol, it is not possible to measure the signal power. Therefore, Zhang teaches measuring the signal power and the interference power using two separate signal structures in the received signal. As noted above, the optimization algorithm depends on calculations performed on one or more of the null symbol; training symbols TRS I or TRS II, or pilot carrier in the OFDM symbol portion of the frame 38.

In contrast, in the claimed invention the signal power and interference power is measure from the same data structure, e.g., the first known structure.

Additionally, in the claimed invention, it is not necessary to add anything to the signal preamble or elsewhere, like the training symbols of Zhang. Rather than adding new structures into the protocol to measure noise, the claimed invention exploits pre-defined modulation characteristics

of certain elements of the communication protocol. This is an advantage over the prior art because bandwidth is limited. In Zhang, each frame includes a number of consecutively transmitted symbols, including a preamble that includes a null symbol and one of two possible adaptive antenna array-training symbols. These adaptive antenna array-training symbols are **not part of the communication standard.**

None of the other references cure the above-identified deficiencies.

Accordingly, Applicant submits that claim 1 is patentable over the cited references; the references, whether taken alone or in any proper combination thereof, fail to teach or suggest each and every limitation of the claim.

Applicant further submits that claims 3-11 and 27 are patentable over the cited references based at least upon the above-identified analysis.

Applicant further submits that new claim 27 is patentable over the cited references based at least upon the following additional reasons. Applicant submits that the references fail to teach two different signals, where first received signal providing the further known structure used in step (a) and where step (b) comprising processing the second received signal to provide the set of amplitude values for determining the power level of the interference signals.

Notably, in the claimed invention, when the wanted signal is so corrupted by the interference such that the position of the bursts cannot be identified, the required information can be obtained from a second signal (auxiliary antenna). The references fail to teach this feature.

Based upon the foregoing, Applicant respectfully requests that the Examiner withdraw the rejections of claims 1 and 3-11 pursuant to 35 U.S.C. § 103(a). Applicant also respectfully requests that the Examiner allow new claim 27.

In conclusion, the Applicant believes that the above-identified application is in condition for allowance and henceforth respectfully solicits the Examiner to allow the application. If the Examiner believes a telephone conference might expedite the allowance of this application, the Applicant respectfully requests that the Examiner call the undersigned, Applicant's attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,

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